

## **Amendments to the claims:**

This listing of claims will replace all prior versions, and listings, of the claims in this application.

Listing of claims:

Claims 1-40 (Canceled)

41. (Currently Amended) A synthetic multimeric biopolymer comprising a plurality of monomeric units chosen from proteins, polypeptides, ~~nucleic acids, peptide nucleic acids,~~ and combinations thereof;

wherein a plurality of said monomeric units in said biopolymer comprise a binding region for an analyte chosen from a sugar, a protein, a peptide, a nucleic acid, a hormone, a vitamin, a co-factor, an anion, and a cation,

wherein the monomeric units that comprise a binding region for an analyte are covalently linked to each other;

wherein each of the covalently linked monomeric units that comprise a binding region for an analyte generates a signal when the analyte is bound thereto; and

wherein the signal generated by the covalently linked monomeric units that comprise a binding region for an analyte when the analyte is bound thereto is greater than the signal generated by the monomeric units that comprise a binding region for an analyte not covalently linked to each other when the analyte is bound thereto.

Claims 42-57 (Canceled)

58. (New) The multimeric biopolymer according to claim 41, wherein the biopolymer comprises at least one calmodulin monomer.

59. (New) The multimeric biopolymer according to claim 58, wherein the biopolymer comprises a calmodulin dimer.

60. (New) The multimeric biopolymer according to claim 41, wherein the biopolymer changes its three-dimensional conformation in response to binding of a proton to or a release of a proton from the binding region.
61. (New) The multimeric biopolymer according to claim 41, wherein the biopolymer comprises an enzyme that catalyzes a biochemical reaction, which results in the formation of protons or hydroxide ions when said enzyme binds to the analyte.
62. (New) The multimeric biopolymer according to claim 41, wherein the biopolymer comprises (a) a protein or polypeptide that changes its three-dimensional conformation in response to binding of a proton or a hydroxide to the binding region, and (b) a protein or polypeptide that catalyzes a biochemical reaction which results in the formation of protons or hydroxide ions when said protein or said polypeptide binds to said analyte.
63. (New) The multimeric biopolymer according to claim 41, wherein the biopolymer comprises from about 2 to about 10 monomeric units.